

REMARKS/ARGUMENTS

Claims 1-8 are pending in this application. Claims 1-6 stand rejected. Claims 7 and 8 have been withdrawn from consideration.

Objection to the Drawings

The drawings stand objected to under 37 C.F. R. 1.83(a). The Examiner indicates that the two fabric or membrane like strips of material with pockets and inserted beam truss elements effecting a hinge must be shown and clearly identified or the feature(s) canceled from the claim(s).

As illustrated in FIG. 3a, and disclosed in the specification, the feature of two fabric or membrane like strips of material with pockets and inserted beam truss elements effecting a hinge is shown. The Examiner is directed to element 25, which is illustrated covering a significant portion of beam element 21 and significant portions of beam elements 24. However, the end portions of each of the beam element 21 and beam elements 24 are not covered by flexible hinge device 25. See, for example, page 3, line 23 to page 4 line 10 of the specification as follows:

Outrigger beams likewise attach to central beam 21 by means of ***flexible hinge device 25***. Such flexible hinge device can be strips of adhesively backed flexible tape attached to beam elements 21 and 24 on either one or both sides. In the preferred embodiment, ***flexible hinge device 25 is comprised of a sewn pocketed fabric joint, into which are inserted the three rectangular beam elements 21 and 24, of which there are two in the preferred embodiment***. Such a joint construction has the advantages of infinite flexural cycles, high strength, and no adhesive failure mechanisms. Also, if desired, the hinge material can be sewn to create a tubular extrusion, capable of being sealed and inflated for the purpose of an automatic deployment mechanism wherein 4 beams might be sewn into a pocketed hinge to create a hollow square cross section when inflated, yet lie flattened when deflated and in a stowed state.

Applicant asserts that the specification and drawing figures clearly illustrate a hinge having two fabric or membrane like strips of material sewn together to create pockets for the insertion of beam like truss elements. Accordingly, withdrawal of the objection to the drawings is respectfully requested.

Objection to the Specification

The disclosure stands objected to because the word “if” should be changed to --of--.

The paragraph beginning on page 6, line 8 has now been amended to replace “moment if inertia” with --moment of inertia--. No new matter has been added. Accordingly, the specification is believed to be allowable.

In addition, the DESCRIPTION OF THE DRAWINGS section beginning on page 2, line 1, and the paragraph beginning on page 5, line 16, have now been amended to correct various errors. No new matter has been added. Accordingly, the specification is believed to be allowable.

Rejection of Claims 2, 4 and 5 under 35 U.S.C. 112, Second Paragraph

Claims 2, 4 and 5 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2

With respect to claim 2, the Examiner states “[i]t is unclear whether the ‘similar beam’ hingedly connected to the long beam is the same as the ‘other structural elements’ of claim 1, or if it is yet another element.

Applicant has amended claim to replace “one or more similar beams” with --one or more single beams--. Applicant asserts that the “other structural elements” of claim 1 and the “one or more single beams” of claim 2 are unique to one another. The “other structural elements” of claim 1 are described and shown in an embodiment as rings 11 and 12. The “one or more single beams” of claim 2 are described and shown in an embodiment as rectangular beam elements 24. Furthermore, claim 2 is now amended to recites that the multiple beam elements of each one of the truss elements comprise a single long beam having non-fully constrained end attachment points, and a hinge for connecting the single long beam to one or more similar beams which do not have constrained end attachment points, for the purpose of existing in either a straight and rigid condition, or to exist in a curved and flexible condition, depending on the angular orientation of hinge. Accordingly, claim 2 is believed to be allowable.

Claim 4

With respect to claim 4, the Examiner states “[i]t is unclear what is meant by ‘alternately connecting trusses on one end...’”

Applicant has now amended claim 4 to recite that neighboring ones of the truss elements on one end of the at least two structural elements are alternately connected on one end of the structure to a fixed attachment ring and on another end of the structure to a rotateable deployment ring. Accordingly, claim 4 is believed to be allowable.

Claim 5

With respect to claim 5, the Examiner indicates that “the hinge element” does not have a proper antecedent basis.

Applicant has now amended claim 5 to delete the word “element” subsequent to the word “hinge”. Applicant has also amended claim 2 to insert --a hinge--. Accordingly, claim 5 is believed to be allowable.

Rejection of Claims 1-6 under 35 U.S.C. 102

Claims 1-6 stand rejected under 35 U.S.C. 102(a) as being anticipated by Okazaki et al. (U.S. Patent No. 5,003,736; referred to herein as “Okazaki”.)

Claim 1

Claim 1, as amended, calls for a space frame structure capable of deployment or retraction comprising multiple truss elements forming the space frame structure, ***multiple beam elements forming each one of the multiple truss elements***, and each one of the truss elements being capable of existing in either a straight and rigid condition, or existing in a curved and flexible condition, with opposed ends of the truss elements connected to at least two other structural elements desired to be held spaced apart in a prescribed orientation. (Emphasis added.) In an exemplary embodiment, referring to FIGS. 3a and 3b, there is shown multiple beam elements, i.e., central flat beam 21 and outrigger beams 24, forming truss element 20. In FIG. 2, there are shown multiple truss elements, i.e., truss elements 20a-h, forming the space frame structure.

Okazaki discloses a structure with multiple longerons 3. However, even assuming the longerons of Okazaki are equivalent to the multiple truss elements, Okazaki does not disclose

multiple beam elements forming each one of the multiple truss elements. Accordingly, claim 1 is believed to be allowable.

Claims 2-6

Claims 2-6, which each depend either directly or ultimately from claim 1, are believed to be in condition for allowance for at least the above-identified reason.

Conclusion

In light of the amendments and remarks provided herein, Applicant respectfully requests the timely issuance of a Notice of Allowance.

Respectfully submitted,

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